

C L A I M S

1. A device by a tool for the setting of an inflatable packer in an annulus (2) of a well for the recovery of hydrocarbons, the annulus (2) being formed between a bore wall (1) of the well and a pipe string (3), e.g. tubing, lowered into the well, characterized in that the tool comprises a sleeve element (4), three housing elements (5, 6, 7; 30; 50, 51) positioned externally on the sleeve element (4), and a packer element (8) extending between two of the housing elements (5, 6; 50, 51), said two housing elements (5, 6; 50, 51) being fixedly arranged on the sleeve element (4), and in that the third housing element (7; 30) is arranged so, that a hardenable substance is transferred from said housing element (7; 30) to an annular chamber (9) of the tool between the sleeve element (4) and the packer element (8), so that the packer element (8) is inflated into sealing abutment against the wall (1) of the well bore, when for instance well fluid from the pipe string (3) is supplied, at the same time, to said housing element (7; 30), said third housing element (7; 30) being formed with more chambers (10, 11; 32, 33) for the hardenable sealing substance than chambers (12; 34) for the well fluid supplied from the pipe string (3), whereby the packer element (8) is inflated into sealing abutment against the wall of the well bore, by a lower pressure than the pressure from the well fluid supplied to said housing element (7; 30).

2. A device according to claim 1, characterized in that the third housing element (7) is releasably and displaceably arranged on the sleeve element (4), the releasable and displaceable housing element (7) being arranged to be released from and displaced along the sleeve

element (4) by a predetermined pressure of the well fluid supplied to the chamber (12), whereby the hardenable sealing substance is transferred from the chambers (10, 11) to the annular chamber (9) when the releasable and displaceable housing element (7) is displaced, at the same time, along the sleeve element (4) by means of the well fluid supplied to the chamber (12).

3. A device according to claim 2, characterized in that the releasable and displaceable housing element (7) is formed with at least three flanges (13, 14, 15) directed inwards towards, and arranged to rest glidingly on, the sleeve element (4), and that the sleeve element (4) is formed with at least two flanges (16, 17) which are directed outwards towards, and adapted to rest glidingly on, the housing element (7), so that the flanges (13, 14, 15, 16, 17) form separate chambers (10, 11, 12) in the releasable and displaceable housing element (7) for the hardenable sealing substance transferred to inflate the packer element (8), or for the well fluid supplied to release and displace the housing element (7).

4. A device according to claim 1, characterized in that the third housing element (30) is fixedly arranged on the sleeve element (4) and has an annular piston (31) arranged thereto, the annular piston (31) being arranged to be displaced along the sleeve element (4), whereby the hardenable sealing substance is transferred from the chambers (32, 33) to the annular chamber (9) when the annular piston (31) is displaced, at the same time, along the sleeve element (4) by means of the well fluid supplied to the chamber (34).

5. A device according to claim 4, characterized in that the fixed housing element (30) is formed with at least three flanges (35, 36, 37) fixedly arranged on the sleeve element (4), that the annular piston (31) is formed with at least two flanges (38, 39) adapted to rest glidingly on the fixed housing element (30) and the sleeve element (4), the flanges (38, 39) of the annular piston (31) being positioned on either side of the middle flange (36) of the fixed housing element (30), so that the flanges (35, 36, 37, 38, 39) form separate chambers (32, 33, 34) within the fixed housing element (30) for the hardenable sealing substance, which is transferred to inflate the packer element (8), or for the well fluid which is supplied to displace the annular piston (31) along the sleeve element (4).

6. A device according to any one of the preceding claims, characterized in that the sleeve element (4) is formed with at least one passage (18) to the chamber (12; 34), which is to accommodate the well fluid.

7. A device according to any one of the preceding claims, characterized in that the releasable and displaceable housing element (7), or the fixed housing element (30), is provided with means (19, 20) for transferring hardenable sealing substance to the annular chamber (9), when the releasable and displaceable housing element (7) or the annular piston (31), is displaced along the housing element (4), and an associated valve unit (21).

8. A device according to claim 7, characterized in that said means for transferring the hardenable substance is formed by thin pipe elements (19, 20) extending from the respective housing element chamber (10, 11; 32, 33)

5 for hardenable sealing substance, and through a flange (22) in the intermediate fixed housing element (6) and that the valve unit (21) is positioned on that side of said flange (22), which faces the packer element (8).

9. A device according to any one of the preceding claims, characterized in that the packer element (8) by the intermediate fixed housing element (6) is connected to a packer sleeve element (26) which is releasably and glidably
5 arranged between the housing element (4) and said fixed housing element (6).

10. A device according to any one of the preceding claims, characterized in that the fixed housing element (50, 51) the most distant from the releasable and displaceable housing element (7), or the fixed housing
5 element (30) with the annular piston (31), is formed of a lower housing element (50) fixedly arranged on the sleeve element (4), and an upper housing sleeve element (51) which is releasably and slidably arranged externally on the lower housing element (50).

11. A device according to claim 10, characterized in that the housing sleeve element (51) is releasably arranged on the lower housing element (50) by means of a number of support elements (53), which are
5 arranged on the sleeve element (4), and equipped with a locking pin (54) each, the locking pins (54) being arranged to rest disengageably against a groove (55) formed in the housing sleeve element (51).

12. A device according to claim 10, characterized in that the packer element (8) is connected to the housing sleeve element (51).

13. A device according to any one of the preceding claims, characterized in that the tool has an accumulator (23, 24; 52) arranged thereto, said accumulator (23, 24; 52) being charged by means of the hardenable sealing substance which is transferred to the annular chamber (9) to inflate the packer element (8).

14. A device according to claim 13, characterized in that the accumulator is formed by a compressible compression spring (23) positioned in an annular chamber (25) between the sleeve element (4) and the fixed housing element (5; 50, 51) the most distant from the releasable and displaceable housing element (7), or the fixed housing element (30) with the annular piston (31), and a displaceable flange (24; 52) arranged thereto and adapted to rest slidably on the sleeve element (4) and the fixed housing element (5; 50, 51).

15. A device according to any one of the preceding claims, characterized in that the tool has at least one mixing pipe (27) arranged thereto, for the hardenable sealing substance which is transferred from the releasable and displaceable housing element (7), or the fixed housing element (30) with the annular piston (31).

16. A device according to claim 15, characterized in that said mixing pipe (27) is positioned in the intermediate fixed housing element (6), and on that side of

the packer sleeve element (26), which faces inwards towards
5 the sleeve element (4).